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IDAHO DEPARTMENT OF HEALTH & WELFARE

Bureau of Community and Environmental Health

Past Lead Exposure and Adult ADHD:
Information for Health Care Providers

What's the relationship between lead exposure and Attention Deficit Hyperactivity Disorder (ADHD)?

Lead is a well-known neurotoxin, both centrally and peripherally. Children under age six are especially vulnerable to neurological damage from lead exposure. Exposure to moderate to high levels of lead in childhood can effect reductions in fine motor functions and IQ, can cause cognitive defects and hyperactivity, and is associated with learning disabilities and behavioral disorders, including Attention Deficit Hyperactivity Disorder (ADHD). The effects of lead exposure on the central nervous system are generally irreversible, but ADHD is considered treatable.

In the 1940s, clinicians first observed hyperactivity in children who had been severely lead poisoned. Since then, epidemiological studies have shown that high blood lead levels or BLLs (>60 mg/dL) associated with acute poisoning can result in severe behavioral problems; that moderate BLLs (20-40 mg/dL) give rise to milder clinical and subclinical effects on attention, concentration and activity levels; and that even slightly elevated BLLs (<15 mg/dL) may lead to subtle, non-clinical behavioral deficits.

How is Adult ADHD Diagnosed and Treated?

The preliminary screening for adult ADHD is a self-administered questionnaire. If a person screens positive via the questionnaire, definitive diagnosis is made through clinical assessment by a psychiatrist or clinical psychologist with experience in the recognition of adult ADHD and its comorbid conditions (such as anxiety and depression). Treatment involves medication (such as Ritalin or antidepressants) along with psychosocial interventions (psychotherapy and skills training). Once the condition has been stabilized under the care of a specialist, patients can be monitored by their regular physician.

What is adult ADHD?

The behavioral syndrome that was previously called ADD or hyperactivity is now named Attention Deficit Hyperactivity Disorder or ADHD in the DSM-IV (American Psychiatric Association, 1994). As it is currently defined, ADHD first manifests in childhood before age 6. ADHD is characterized by three behavioral patterns: impulsivity, inattention, and hyperactivity (though the hyperactivity component may not be present in all cases). These behaviors cause many problems in everyday life, such as difficulty concentrating, an inability to complete one task before moving on to another, school and occupational underachievement with failures and demoralization, restlessness and fidgetiness, easy frustration and boredom, and relationship problems.

Psychiatric comorbidity is common (such as major depression, anxiety disorders, and substance abuse); these other conditions should be treated before ADHD is diagnosed because while symptoms overlap, treatments often do not.

Until recently, experts believed that children "grew out of" ADHD, but now it is estimated that 10% to 60% of those with ADHD in childhood will continue to have symptoms as adults.

In the general population, ADHD is considered multifactorial in origin with genetic inheritance playing an important role. People who were exposed to high levels of lead as children would have an additional risk factor for ADHD.

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